



U.S. Department of Energy Office of River Protection

Management of the Hanford Waste Treatment and Immobilization Plant (WTP)

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Office of River Protection





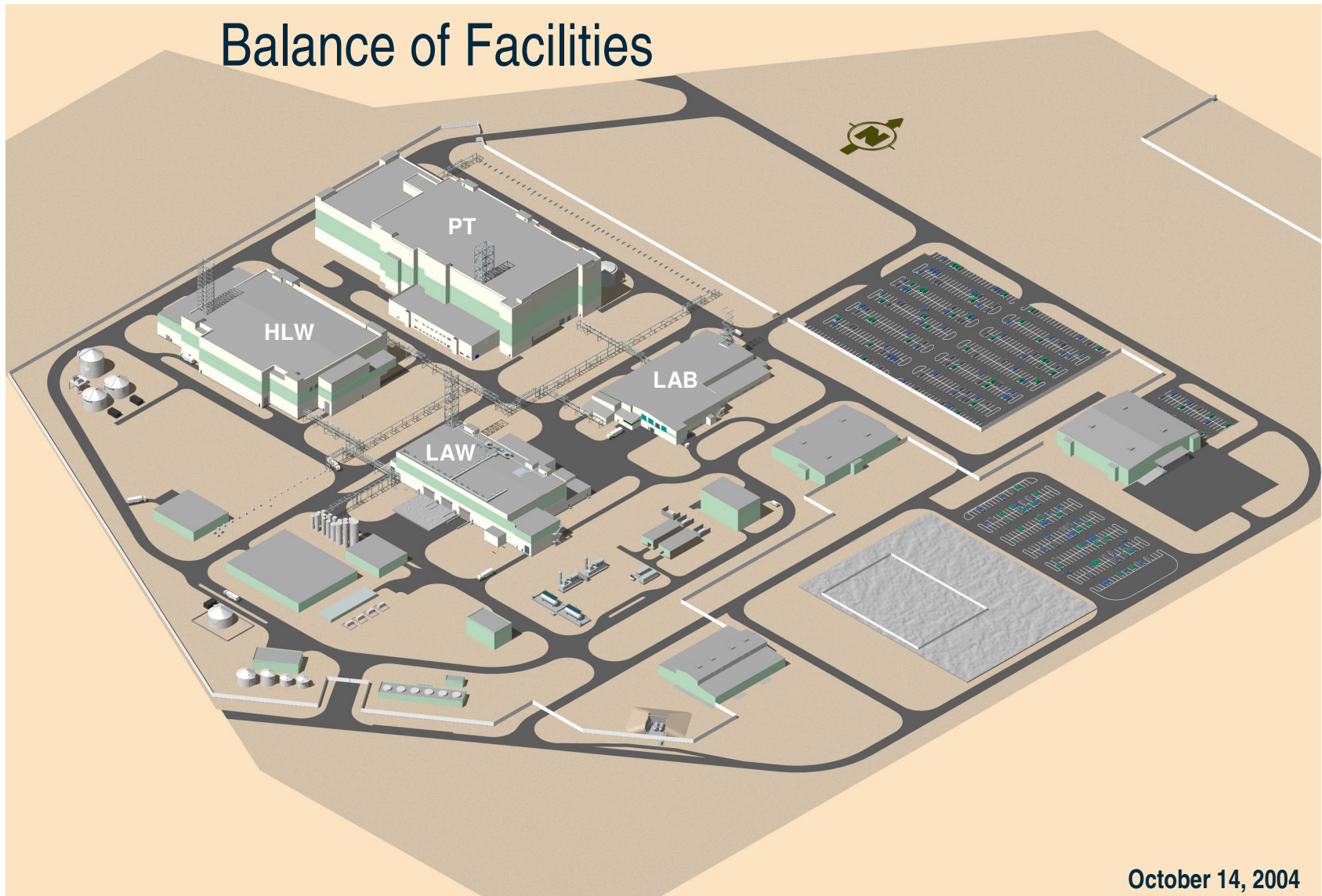
Mission

- ❑ Stabilize 53 M gallons of tank waste through vitrification
- ❑ Vitrified waste will contain 180 M Curies and be either High Level Waste (HLW) or Low Activity Waste (LAW)
- ❑ HLW (97% of Curies) will be disposed of at Yucca Mountain
- ❑ LAW (3% of Curies) will be disposed of on the Hanford Site



WTP

Balance of Facilities



October 14, 2004



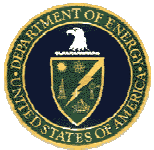
Cost and Schedule

- ☐ Contract awarded to Bechtel National, Inc. in December 2000
- ☐ Estimated project cost through commissioning -- \$5.8B
- ☐ Construction completed in late 2008
- ☐ Commissioning completed in 2011
- ☐ Processing completed in 2028



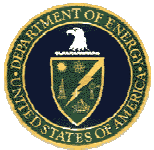
WTP – June 2002





WTP – April 2005





High-Level Waste, Low Activity Waste, Pretreatment and Analytical Laboratory Facilities





Pretreatment Facility





WTP Project is Comparable in Size to a 2 Unit Nuclear Power Plant



		WTP	Average 2 Unit Nuclear Power Plant	DWPF*
Concrete	Cubic Yards	253,300	300,000	93,100
Structural Steel	Tons	26,700	n/a	540
HVAC Ductwork	Pounds	3,494,100	n/a	402,000
Piping	Lineal Feet	903,400	350,000	510,000
Cable Tray	Lineal Feet	97,200	82,000	30,000
Conduit	Lineal Feet	781,500	390,000	400,000
Cable	Lineal Feet	4,157,200	6,100,000	3,700,000

* Defense Waste Processing Facility, Savannah River Site



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- ❑ ORP is owner of the WTP and responsible for design, cost, schedule, safety, and compliance with all laws and regulations
- ❑ WTP Project is the line organization created to enable ORP to oversee all aspects of the project
- ❑ WTP Project focuses on contractor performance and effectiveness in addition to compliance with requirements



Office of River Protection

**Office of River Protection
Manager**

**Waste Treatment and Immobilization Plant Project
WTP Project Director**

**WTP Engineering Division
Facility Area Engineers
Safety System Oversight Personnel**

**WTP Programs and Projects Division
Federal Project Directors
Project Controls**

Safety Authorization Basis Team

**Operations and Commissioning Team
Facility Representatives
Acceptance and Inspection**



WTP Project Federal Project Director

- ❑ Responsible to the ORP Manager for all aspects of the project including
 - Safety
 - Quality
 - Design
 - Cost
 - Schedule
 - Mission Completion (Life Cycle)



WTP Facility Sub-Federal Project Directors

- ☐ Assigned to each of the five WTP facilities
- ☐ Primary point of contact between ORP and Facility contractors
- ☐ Emphasis of oversight is on cost and schedule
- ☐ Cost and schedule changes reviewed through the trend process
- ☐ Scope of duties equivalent to Level IV Project Managers
- ☐ Qualification includes functional area, facility-specific and project management certification



WTP Project Facility Area Engineers

- ☐ Unique DOE position
- ☐ Assigned to each of the five facilities
- ☐ Monitor and address technical issues for all systems of a facility
- ☐ Perform design reviews to assess contractor performance
- ☐ Personnel must obtain facility-specific and functional area qualification



WTP Project Safety System Oversight

- ☐ New DOE position being implemented around the Complex to provide better oversight of safety systems
- ☐ Discipline-specific personnel assigned to safety systems throughout the five facilities
- ☐ Monitor design and engineering of assigned safety systems
- ☐ Personnel must obtain safety system-specific and functional area qualification



Roles and Responsibilities

	Facility Area Engineer	Safety System Oversight	Federal Project Director	Facility Representative
Position	Unique to ORP	DOE-wide	Government-wide	DOE-wide
Responsibilities	All facility systems	All safety systems	All facility systems	All facility systems
System Knowledge	Broad	In-depth	Broad	Broad and In-depth
Emphasis	Engineering	Engineering/Safety	Cost and Schedule	Implementation



WTP Project Safety Authorization Basis Team

- ☐ Traditional DOE position
- ☐ Develops and approves the “license” granted by DOE to the Contractor to build the WTP
- ☐ Reviews acceptability of design to operate the facility safely
- ☐ Approves applicable standards for the Project
- ☐ Personnel must obtain functional area qualification

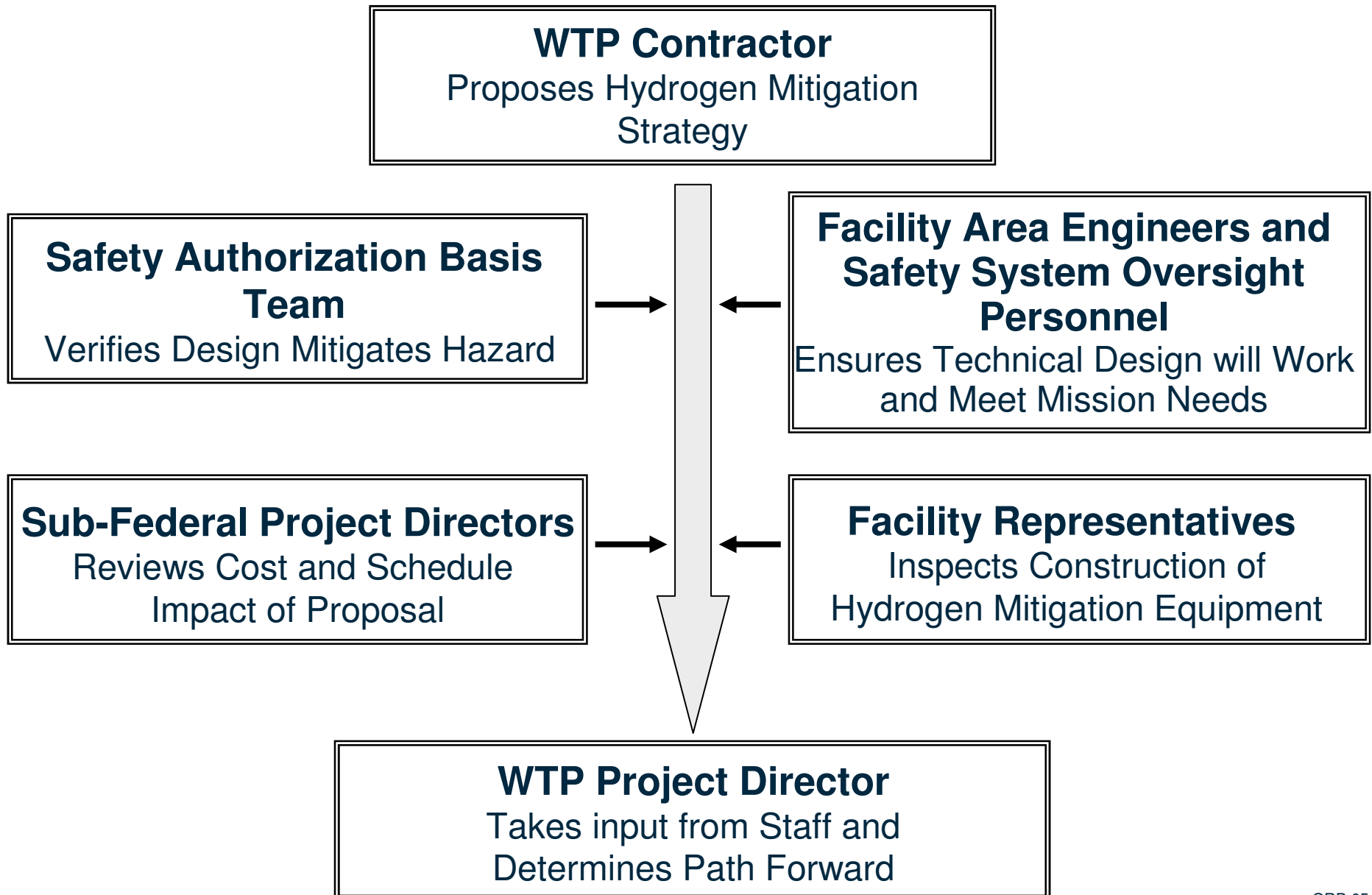


WTP Project Facility Representatives

- ☐ Develop operational awareness through daily oversight of contractor construction activities to ensure compliance with safety and contract requirements
- ☐ Determine acceptability of construction including compliance with quality assurance/quality control requirements
- ☐ Develop commissioning strategy for facility start-up
- ☐ Personnel maintain general Facility Representative qualifications and WTP facility-specific qualification under development



WTP Project – Example





WTP Project

- ☐ Line organization developed to provide dedicated management of the WTP contract
- ☐ Line continuously monitors contractor performance to benchmark and drive improvement and efficiency
- ☐ Line personnel have defined roles that must be performed in order for ORP to meet its responsibilities as the owner



WTP Project

- ❑ Extensive training and qualification program developed to ensure highly technical and competent staff
- ❑ Line organization consists of all key components (e.g., nuclear safety, FRs, engineers, project controls) to ensure consistent and directed management approach
- ❑ Use of Federal staff in these positions ensures that DOE's interests are protected for all aspects of the project